## AMENDMENTS TO THE CLAIMS

Please amend claims 1, 10, 20 and 29. No new matter is believed to be introduced as a result of the aforementioned amendments. The following list of claims replaces all previous claim listings in this case.

1. **(Currently amended)** A cathode head suitable for use in an x-ray device that includes an anode having a target surface configured and arranged to receive electrons emitted by the cathode head so as to generate x-rays, the cathode head comprising:

an emitter block;

an emitter attached to the emitter block and configured to generate an electron beam that defines a focal spot on the target surface of the anode; and

at least one magnetic element ~~disposed proximate the emitter~~ arranged such that flux lines of a magnetic flux density B of a magnetic field associated with the at least one magnetic element are substantially perpendicular to a direction of travel of the electron beam.

2. **(Original)** The cathode head as recited in claim 1, wherein the at least one magnetic element comprises at least one electromagnet.

3. **(Original)** The cathode head as recited in claim 1, wherein the at least one magnetic element comprises at least one permanent magnet.

4. **(Original)** The cathode head as recited in claim 1, wherein the emitter block is substantially non-magnetic.

5. **(Original)** The cathode head as recited in claim 1, wherein the emitter block is magnetic.

6. **(Original)** The cathode head as recited in claim 1, wherein the emitter defines a longitudinal axis about which the at least one magnetic element is disposed.

7. **(Original)** The cathode head as recited in claim 1, wherein the at least one magnetic element comprises a pair of electromagnets.

8. **(Original)** The cathode head as recited in claim 1, wherein the at least one magnetic element and the emitter block cooperate to create a magnetic field through which at least a portion of the electron beam passes.

9. **(Original)** The cathode head as recited in claim 1, wherein the emitter comprises at least one filament.

10. **(Currently amended)** A cathode head suitable for use in an x-ray device that includes an anode having a target surface configured and arranged to receive electrons emitted by the cathode head, the cathode head comprising:

an emitter block;

an emitter attached to the emitter block and configured to generate an electron beam that defines a focal spot on the target surface of the anode; and

means for facilitating focal spot control, wherein the means generates a magnetic field with a magnetic flux density B having flux lines that are substantially perpendicular to a direction of travel of the electron beam.

11. **(Original)** The cathode head as recited in claim 10, wherein the means for facilitating focal spot control serves to adjust the position of the focal spot on the target surface.

12. **(Original)** The cathode head as recited in claim 10, wherein the means for facilitating focal spot control enables at least lateral adjustments to the position of the focal spot on the target surface.

13. **(Original)** The cathode head as recited in claim 10, wherein the means for facilitating focal spot control employs a magnetic field to adjust the position of the focal spot on the target surface.

14. **(Original)** The cathode head as recited in claim 13, wherein the magnetic field is substantially perpendicular to the electron beam.

15. **(Original)** The cathode head as recited in claim 10, wherein the means for facilitating focal spot control implements an adjustable deflection of the electron beam.

16. **(Original)** The cathode head as recited in claim 10, wherein the means for facilitating focal spot control acts on the electron beam in a location proximate the emitter.

17. **(Original)** The cathode head as recited in claim 10, wherein the emitter block is substantially non-magnetic.

18. **(Original)** The cathode head as recited in claim 10, wherein the emitter block is magnetic.

19. **(Original)** The cathode head as recited in claim 10, wherein the means for facilitating focal spot control cooperates with the emitter block to create a magnetic field through which at least a portion of the electron beam passes.

20. **(Currently amended)** An x-ray device, comprising:

a vacuum enclosure;

an anode substantially disposed within the vacuum enclosure, the anode including a target surface; and

a cathode head substantially disposed within the vacuum enclosure and comprising:

an emitter block;

an emitter attached to the emitter block and configured to generate an electron beam that defines a focal spot on the target surface of the anode; and

at least one magnetic element ~~disposed proximate the emitter~~ arranged such that flux lines of a magnetic flux density B of a magnetic field associated with the at least one magnetic element are substantially perpendicular to a direction of travel of the electron beam.

21. **(Original)** The x-ray device as recited in claim 20, wherein the at least one magnetic element comprises a pair of electromagnets.

22. **(Original)** The x-ray device as recited in claim 20, wherein the at least one magnetic element comprises a permanent magnet.

23. **(Original)** The x-ray device as recited in claim 20, wherein the emitter block is substantially non-magnetic.

24. **(Original)** The x-ray device as recited in claim 20, wherein the emitter block is magnetic.

25. **(Original)** The x-ray device as recited in claim 20, wherein the emitter defines a longitudinal axis about which the at least one magnetic element is disposed.

26. **(Original)** The x-ray device as recited in claim 20, wherein the at least one magnetic element and the emitter block cooperate to create a magnetic field through which at least a portion of the electron beam passes.

27. **(Original)** The x-ray device as recited in claim 20, wherein the anode is a rotating anode.

28. **(Original)** The x-ray device as recited in claim 20, wherein the anode is a stationary anode.

29. **(Currently amended)** A cathode head suitable for use in an x-ray device that includes a vacuum enclosure within which is disposed an anode having a target surface configured and arranged to receive electrons emitted by the cathode head, the cathode head being substantially disposed within the vacuum enclosure and comprising:

an emitter block;

a filament attached to the emitter block and defining a longitudinal axis, the filament being configured to emit an electron beam that defines a focal spot on the target surface of the anode; and

at least one electromagnet attached to the emitter block and ~~disposed about the longitudinal axis defined by the filament~~ arranged such that flux lines of a magnetic flux density B of a magnetic field associated with the at least one electromagnet are substantially perpendicular to a direction of travel of the electron beam.

30. **(Original)** The cathode head as recited in claim 29, wherein the emitter block is substantially non-magnetic.

31. **(Original)** The cathode head as recited in claim 29, wherein the emitter block is magnetic.

32. **(Original)** The cathode head as recited in claim 29, wherein the at least one electromagnet comprises a pair of electromagnets.